



# THE HANFORD SITE

## Effluent Treatment Facility Upgrades to Support the Direct-Feed Low-Activity Waste Program

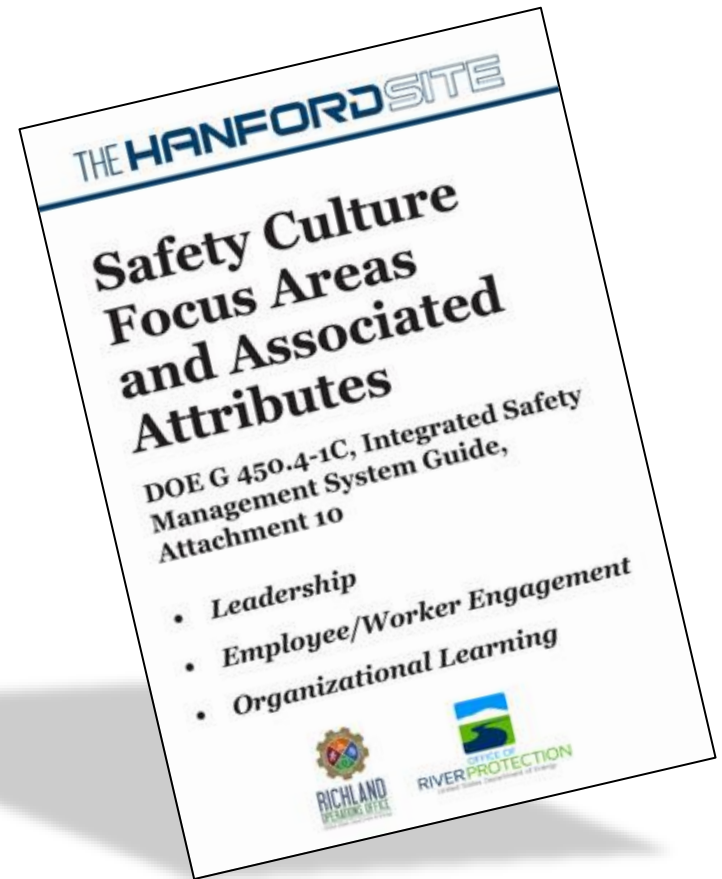
### Progress Update

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## Leadership

“The organization maintains a highly knowledgeable workforce to support a broad spectrum of operational and technical decisions. Technical and safety expertise is embedded in the organization. **Outside expertise is employed when necessary.**”



- **Objective of the briefing:** Explain the purpose of upgrades at the Effluent Treatment Facility and Liquid Effluent Retention Facility, and to support Direct-Feed Low-Activity Waste (DFLAW) Program operations
- **Related HAB Work Plan issue:** Infrastructure upgrades
- **What do we want from the HAB:** Information only



## DFLAW

### DIRECT-FEED LOW-ACTIVITY WASTE

Hanford's DFLAW program integrates a group of individual projects, facilities, and infrastructure upgrades, with involvement from all of Hanford's contractors.

Through DFLAW, the U.S. Department of Energy's contractors will retrieve, treat, and immobilize low-activity waste.



### INFRASTRUCTURE

ELECTRICAL

WATER/SEWER

ROADS

SECURITY

INFORMATION TECHNOLOGY

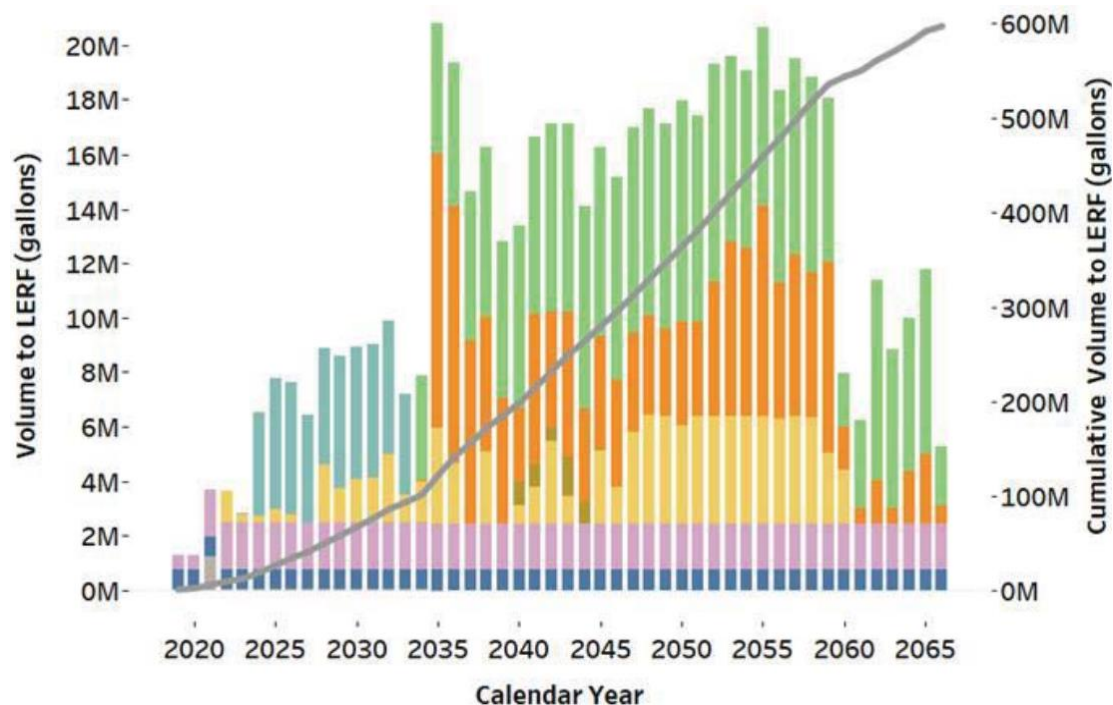
EMERGENCY PREPAREDNESS

**Mission:** Store, treat and dispose of large volumes of liquid waste as a treatment, storage and disposal unit including waste generated from the Waste Treatment and Immobilization Plant upon startup of Direct-Feed Low-Activity Waste processing

- The Liquid Effluent Retention Facility (LERF) stores liquid wastes
- The Effluent Treatment Facility (ETF) treats the liquid wastes

In order to receive and treat WTP DFLAW effluent, the LERF and ETF needed:

- Expanded capability
- Increased capacity
- Enhanced reliability







Upgraded ultraviolet/oxidation units



Upgraded stainless steel peroxide destruction modules



Upgraded reverse osmosis system



New brine loadout system installation





Upgraded HVAC chiller units



Upgraded compressed air system



Upgraded cooling water system



LERF Basin 44 cover replacement



- Additional treatment system projects:
  - ☐ Install supplemental organics treatment system
  - ☐ Install carbon dioxide removal units
- Additional infrastructure / life-extension upgrades:
  - ☐ Install new LERF basin (Basin 41)
  - ☐ Upgrade ETF Load-In station
  - ☐ Replace monitoring and control system
  - ☐ Replace motor control center
  - ☐ Replace vessel offgas system
  - ☐ Replace freeze protection
  - ☐ Repair verification tank coatings (3 of 3)
- Ongoing operational reliability:
  - ☐ Conduct of operations, training, procedure improvements

- Liquid waste processing facilities are the last step in the WTP DFLAW Program operations
- To receive and treat DFLAW effluent, liquid waste processing facilities needed operational upgrades
- LERF and ETF are a Departmental mission priority